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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/674,168      | 09/29/2003  | Marc J. Hildebrandt  | KING-59C            | 1954             |

7590

09/16/2005

Christopher John Rudy  
Ste. 8  
209 Huron Ave.  
Port Huron, MI 48060

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| EXAMINER |
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GARBER, CHARLES D

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2856

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/674,168

Applicant(s)

HILDEBRANDT ET AL. 

Examiner

Charles D. Garber

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 August 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 7-15 and 19-24 is/are pending in the application.  
4a) Of the above claim(s) 3, 12, 15 and 18 is/are withdrawn from consideration.  
5) ☒ Claim(s) 19-24 is/are allowed.  
6) ☒ Claim(s) 1, 2, 7-11, 13 and 14 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 08/17/2005 have been fully considered but they are not persuasive. See updated rejection below.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner et al. (US Patent 6,306,658) in view of Stokes et al. (US Patent 5,167,275).

Regarding claims 1, Turner discloses reactor vessel 100 which is an article of manufacture including block 106 which is a directly refrigerated component or system in which a passageway 300 with thermal fluid 290 flows

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(see figure 7 and column 11 lines 9-58) for "removing heat". Stirring blade 108, 702 may be used to measure viscosity (abstract, column 20 lines 30-62).

Turner also discloses the block made of a thermally conducting material such as metal (column 11 lines 55-60). Thermal conduction between the reaction cells 104 and the coolant passages 300 will occur through the solid material forming walls of the block 106.

The fluid 290 cools by heat transfer. It may evaporate to a gaseous state by such action as in the instant invention intended use. There is nothing preventing it.

Turner does not expressly teach providing passive cooling moderation.

Stokes discloses a heat exchanger which is a manufactured article which is directly refrigerated including a refrigerating pathway 30 within heat exchange tube 12 also teaching passive cooling moderation by turbulator structure 24.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide passive cooling moderation such as with an insert "for increasing the heat transfer capacity of a heat transfer tube" and thereby improving the efficiency of the heat exchanger.

As for claim 2, the passages 38 and 30 are moderating live spaces with at least two cascade points provided at the ends of the turbulator. The live spaces and cascades points are critical to producing the turbulence effective for increasing the heat transfer discussed above.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the live spaces with at least two cascade

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points provided at the ends of the turbulator for the same reason discussed above.

As for claims 7-9, Figure 7 shows a plurality of vertically oriented wells 104 into each of which is placed a sample vessel 102 or sleeve; a plurality of sample sleeves, and each of which can receive the oleaginous fluid and a rotor. Turner also discloses "temperature sensors (not shown) located in the reactor block 106". In another embodiment, Turner discloses a heater 262 around the vessel (figure 6 and column 10 lines 42-67). However, Turner discloses elements of the separate embodiments may be combined (column 11 lines 20-28). As discussed above, Turner disclosed a refrigerant passageway and Stokes taught the advantage of positioning a passive cooling moderator or "turbulator" in the passageway.

#### ***Allowable Subject Matter***

Claims 19-24 are allowed.

Claims 10, 11, 13, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory

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action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg



**CHARLES GARDER  
PRIMARY EXAMINER**